

Figure 1

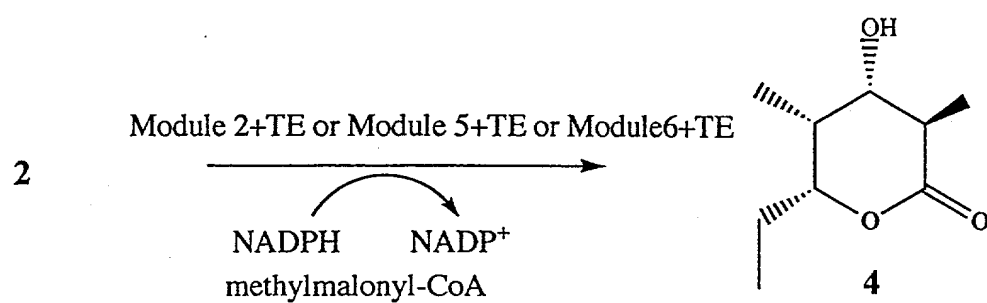
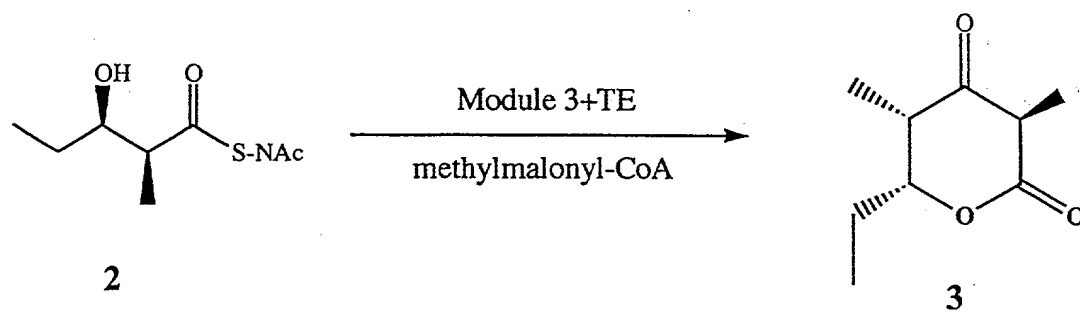


Figure 2

(a) INTRA-POLYPEPTIDE LINKER

M2ery: GGATGAEQAAPATT..APVD
M4ery: VGDAD..QAA.VRVVGAA.DES
M6ery: VGAAEAEQA.PALVREVPKDDAD
M2rif: FGSA.A.NR.PAEIGTAAAE
M3rif: LG..ER.PAAPAPVTRDVSD
M5rif: GETVAGAPATPVTTVADAG
M3rap: .ELFTGENPAPVRGPVSAVGQD
M4rap: .ELFTGENPAPVRGPVSVVGQD
M7rap: .ELFTGENPAPVRGPVSA.GQD

(b) N-TERMINAL INTER-POLYPEPTIDE LINKER

M3ery:VTD SE KVAEYLRR .ATL DLRAAR QRIRE..LES
M5ery: MSGDNGM.TE E.KLRRYLKR TVT.ELDSVT ARLRE..VEH RAG
M4rif:MSAPNE QIVDAL.R ASLKE....N VRLQQENSAL AAAAA
M7rif:VSASYE KVVEAL.R KSLEE....V GTLKKRNRQL ADAAG
M8rif:V.AD EGQLRDYLKR .AIADARDAR TRLRE..VEE QAR
M9rif:MATD E.KLLKYLKR .VTAE LHS.. ..LRKQGARH .AD
M5rap:MR.. EDQLLDAL.R KSVKE....N ARLRKANTSL RAAMD
M11rap:M.PEQD KVVEYL.R WATAELHTTR AKL.....EA LAAANT

Figure 3

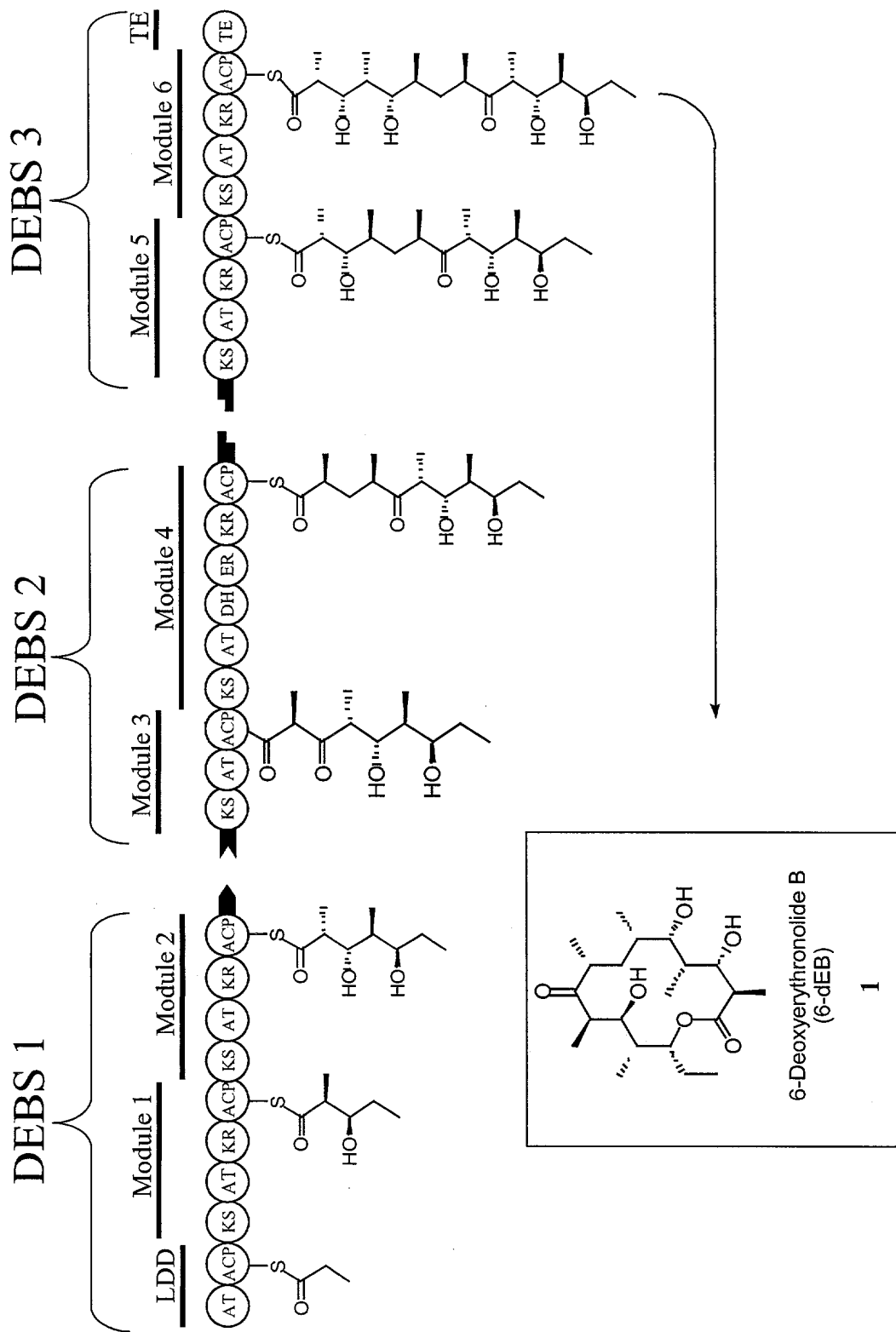


Figure 4

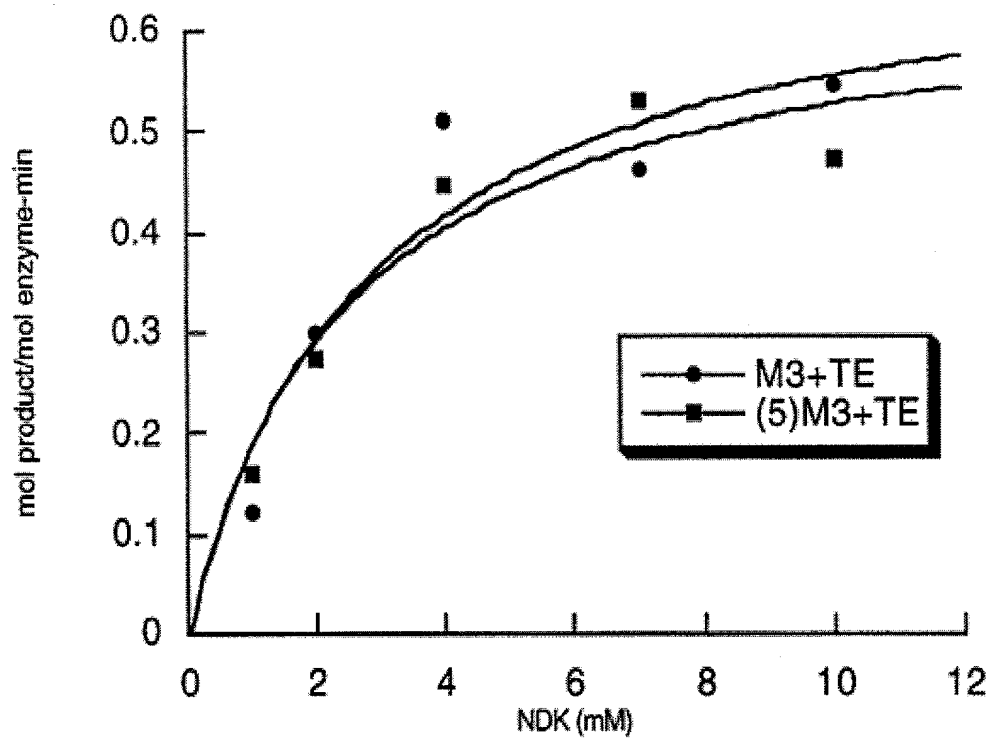
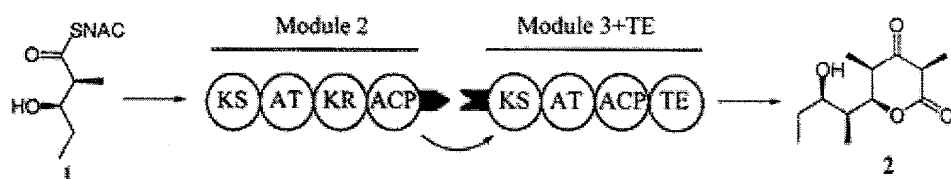
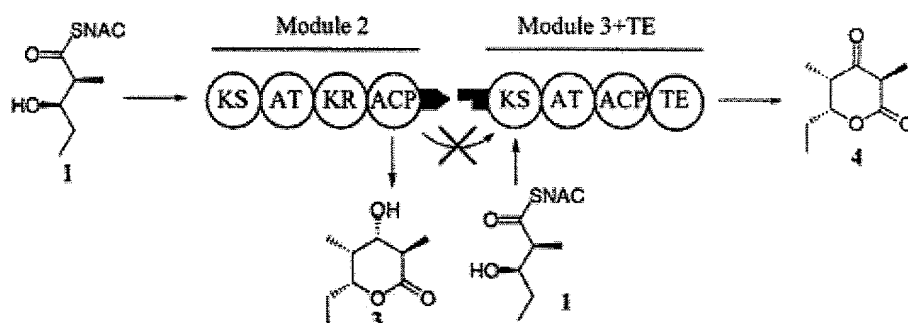


Figure 5

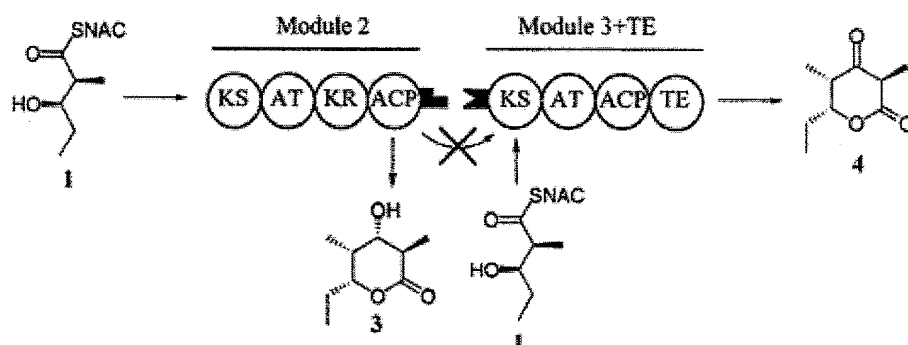
A. M2 and M3+TE



B. M2 and (5)M3+TE



C. M2(4) and M3+TE



D. M2(4) and (5)M3+TE

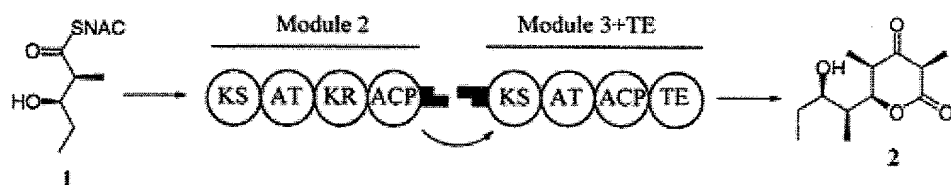


Figure 6

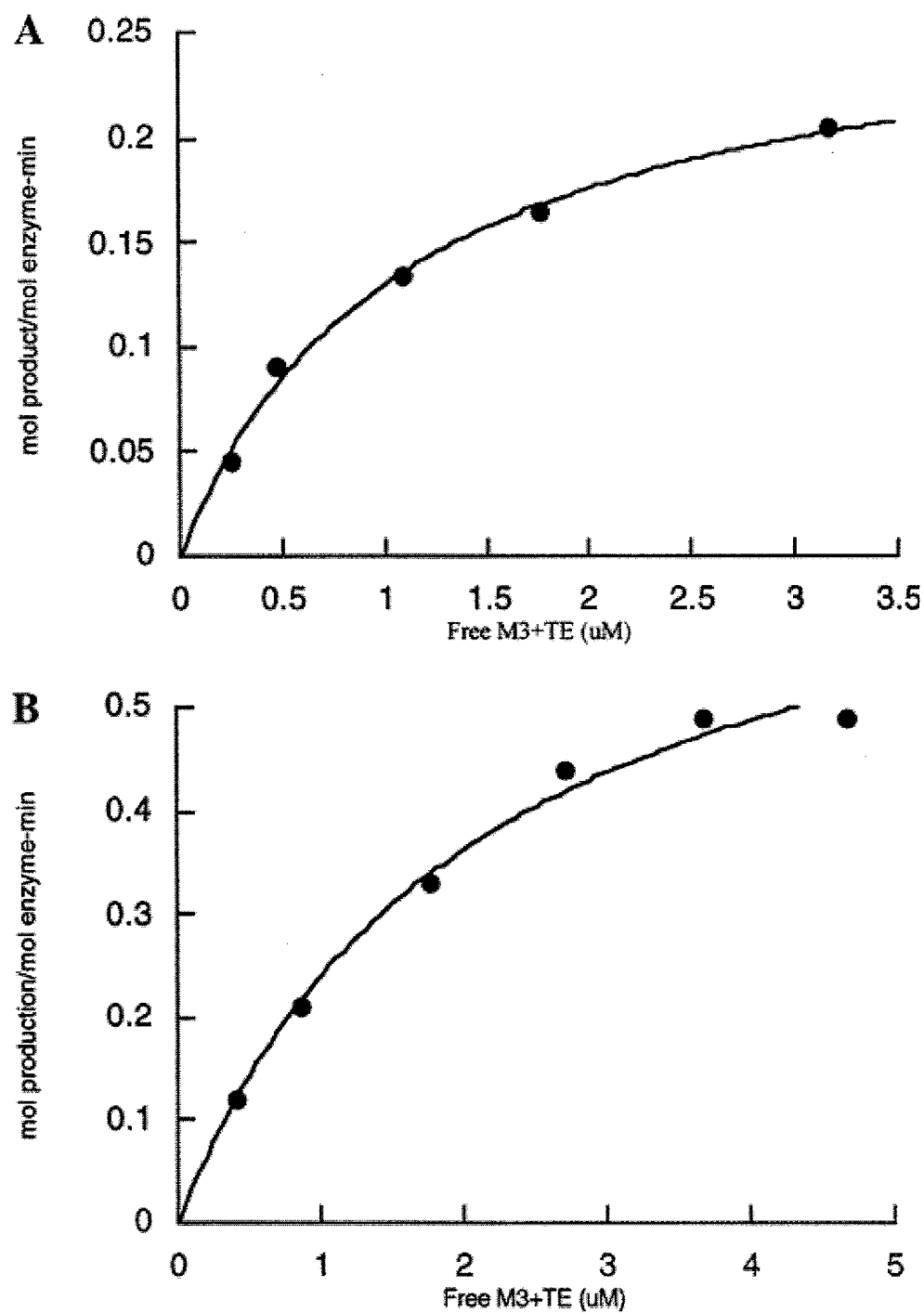


Figure 7

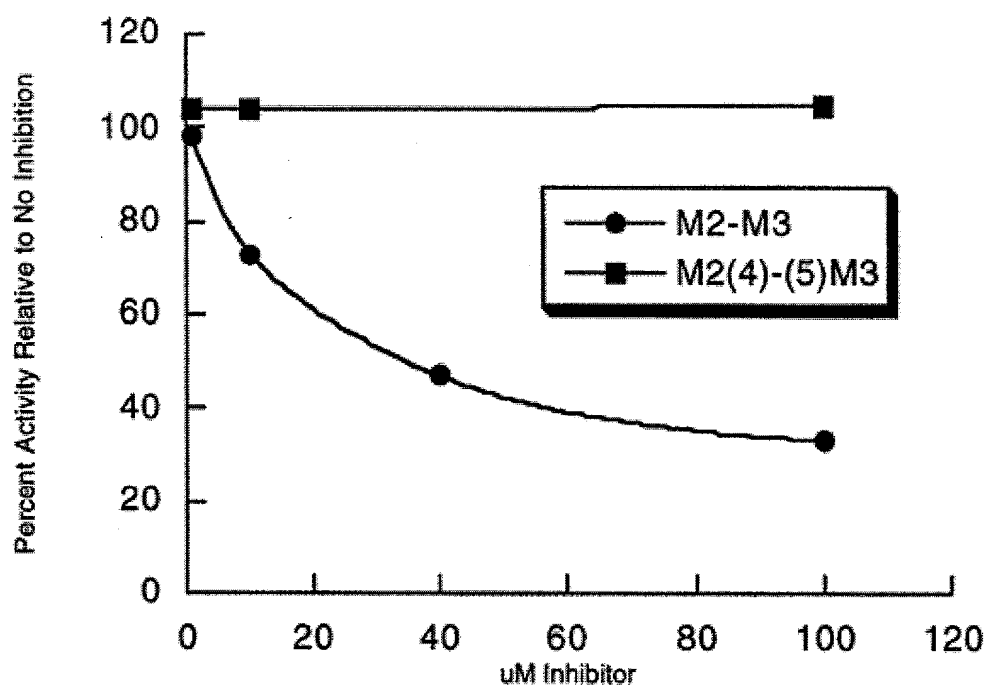


Figure 8

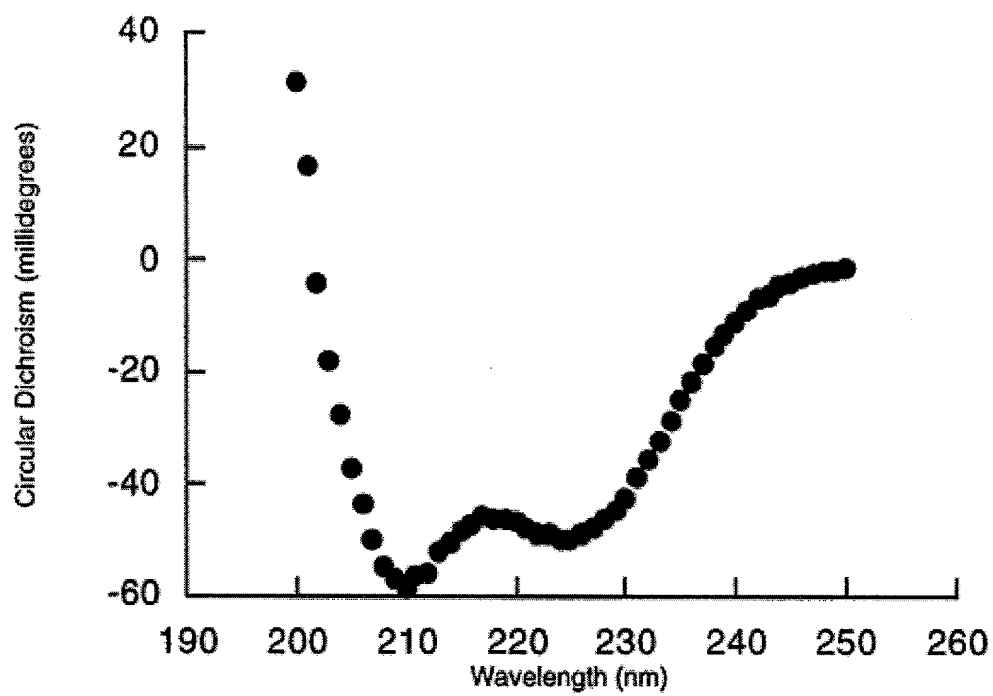
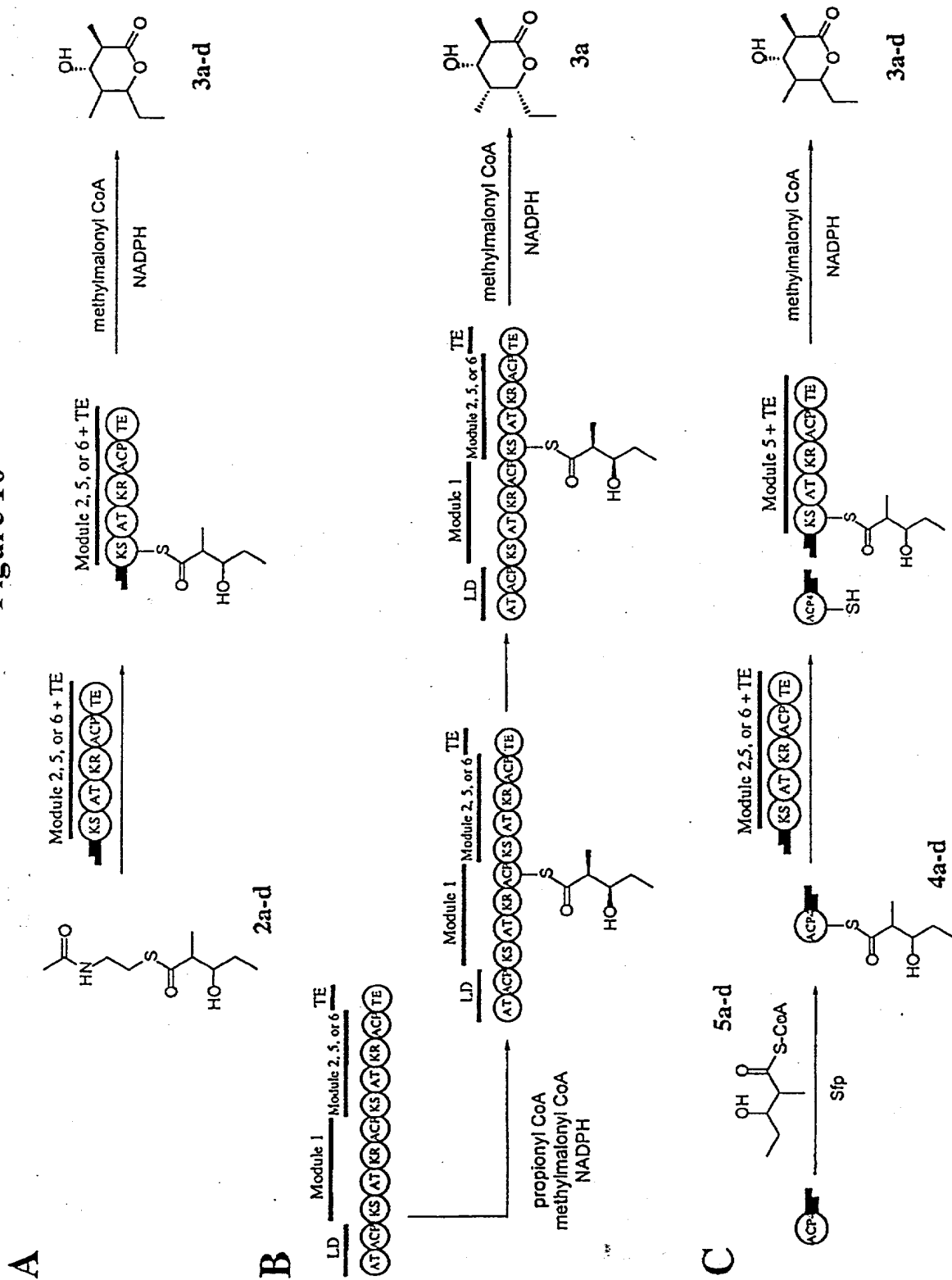
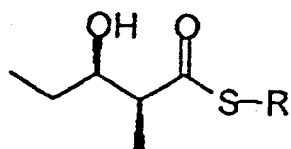


Figure 9

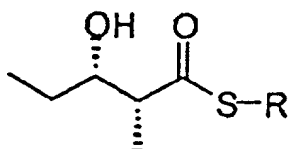
Figure 10





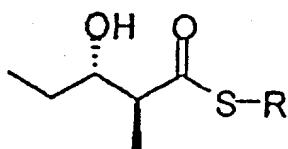
2a: R=N-acetylcysteamine

4a: R=Acyl carrier protein



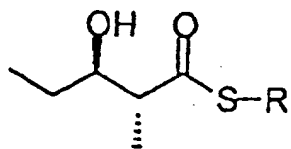
2b: R=N-acetylcysteamine

4b: R=Acyl carrier protein



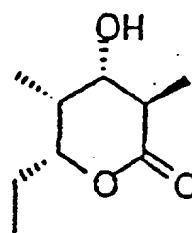
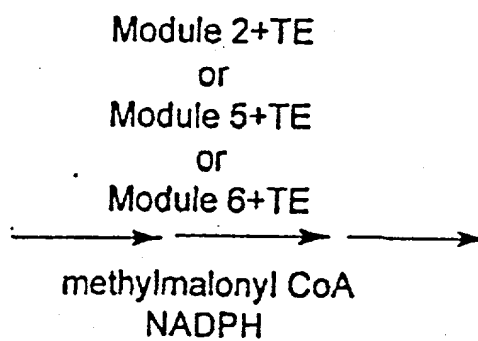
2c: R=N-acetylcysteamine

4c: R=Acyl carrier protein

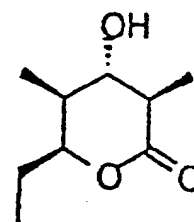


2d: R=N-acetylcysteamine

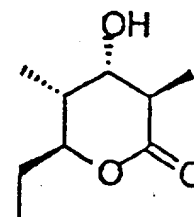
4d: R=Acyl carrier protein



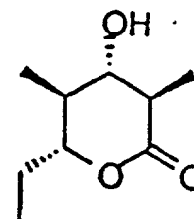
3a



3b



3c



3d

Figure 11

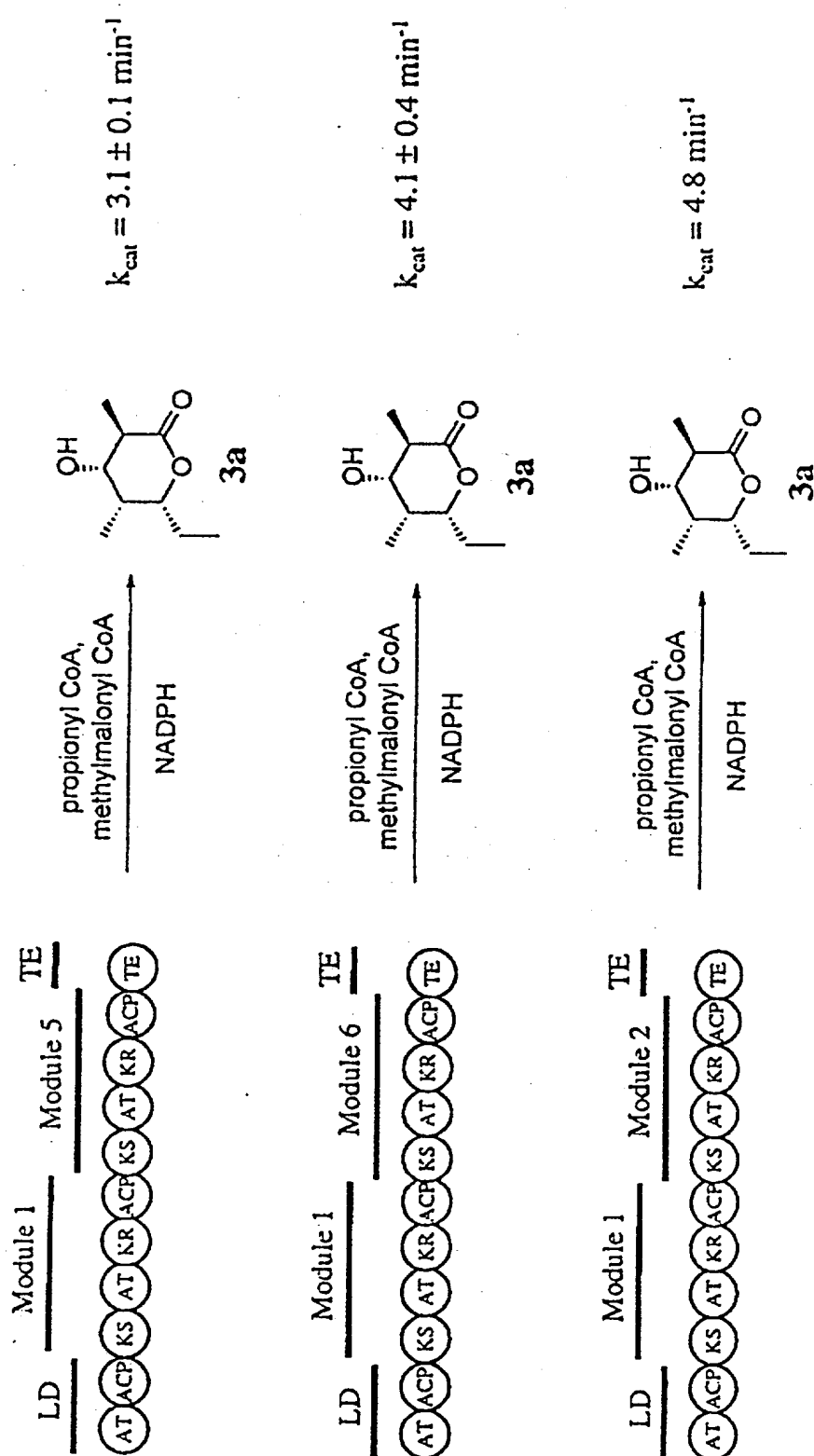


Figure 12




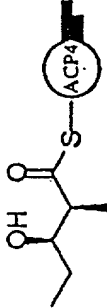
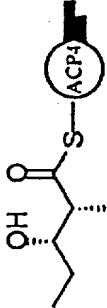
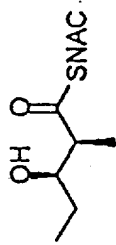
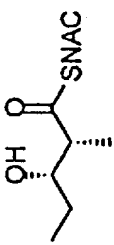
| Substrate | (5)Module 2 + TE  | (5)Module 5 + TE  | (5)Module 6 + TE  |
|---|---|--|---|
| 4a  | 2900 ± 500 | 290 ± 50 | 340 ± 60 |
| 4b  | 18 ± 1 | 3.9 ± 0.7 | 85 ± 15 |
| 2a  | 0.75 ± 0.01 | 0.016 ± 0.002 | 1.1 ± 0.1 |
| 2b  | 0.0076 ± 0.0006 | 0.0011 ± 0.0001 | 0.058 ± 0.006 |

Figure 13




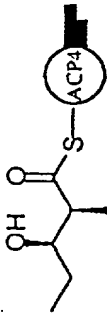
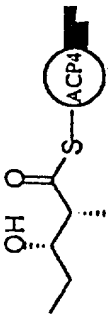
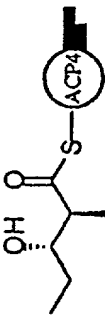
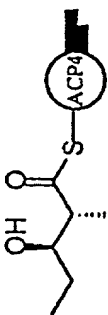
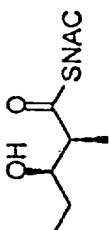
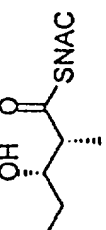
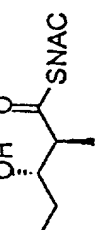
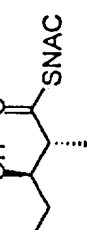
| Substrate | (5)Module 2 + TE | | | | | | (5)Module 5 + TE | | | | | | (5)Module 6 + TE | | | | | | | | | | | |
|-----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----------------|--|--|--|--|--|
| |  KS AT KR ACP TE | | | | | |  KS AT KR ACP TE | | | | | |  KS AT KR ACP TE | | | | | | | | | | | |
| 4a |  | | | | | | 6.7 ± 0.2 | | | | | | $> 9.3 \pm 1.4$ | | | | | | $> 10 \pm 1$ | | | | | |
| 4b |  | | | | | | $> 0.97 \pm 0.02$ | | | | | | $> 0.48 \pm 0.02$ | | | | | | $> 3.4 \pm 0.4$ | | | | | |
| 4c |  | | | | | | $> 1.0 \pm 0.1$ | | | | | | $> 1.4 \pm 0.1$ | | | | | | $> 2.1 \pm 0.2$ | | | | | |
| 4d |  | | | | | | $> 0.29 \pm 0.03$ | | | | | | $> 0.20 \pm 0.01$ | | | | | | $> 1.9 \pm 0.1$ | | | | | |
| 2a |  | | | | | | $> 4.6 \pm 0.6$ | | | | | | 0.24 ± 0.01 | | | | | | 17 ± 2.9 | | | | | |
| 2b |  | | | | | | 0.25 ± 0.02 | | | | | | 0.017 ± 0.001 | | | | | | 2.4 ± 0.2 | | | | | |
| 2c |  | | | | | | N. D. | | | | | | N. D. | | | | | | N. D. | | | | | |
| 2d |  | | | | | | N. D. | | | | | | N. D. | | | | | | N. D. | | | | | |

Figure 14

5

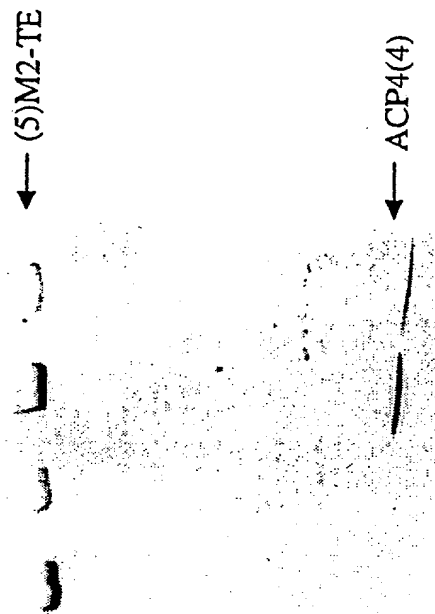
1

2nd

3

4

5



| Lane | ACP | Module | ¹⁴ C-Label | Extender | Unit |
|------|--------------|----------|-----------------------|-------------------|------|
| 1 | holo-ACP4(4) | none | * 2 a | none | none |
| 2 | none | (5)M2+TE | * 2 a | none | none |
| 3 | none | (5)M2+TE | * 2 a | methy/malonyl-CoA | |
| 4 | holo-ACP4(4) | (5)M2+TE | * 2 a | none | none |
| 5 | holo-ACP4(4) | (5)M2+TE | * 2 a | methy/malonyl-CoA | |

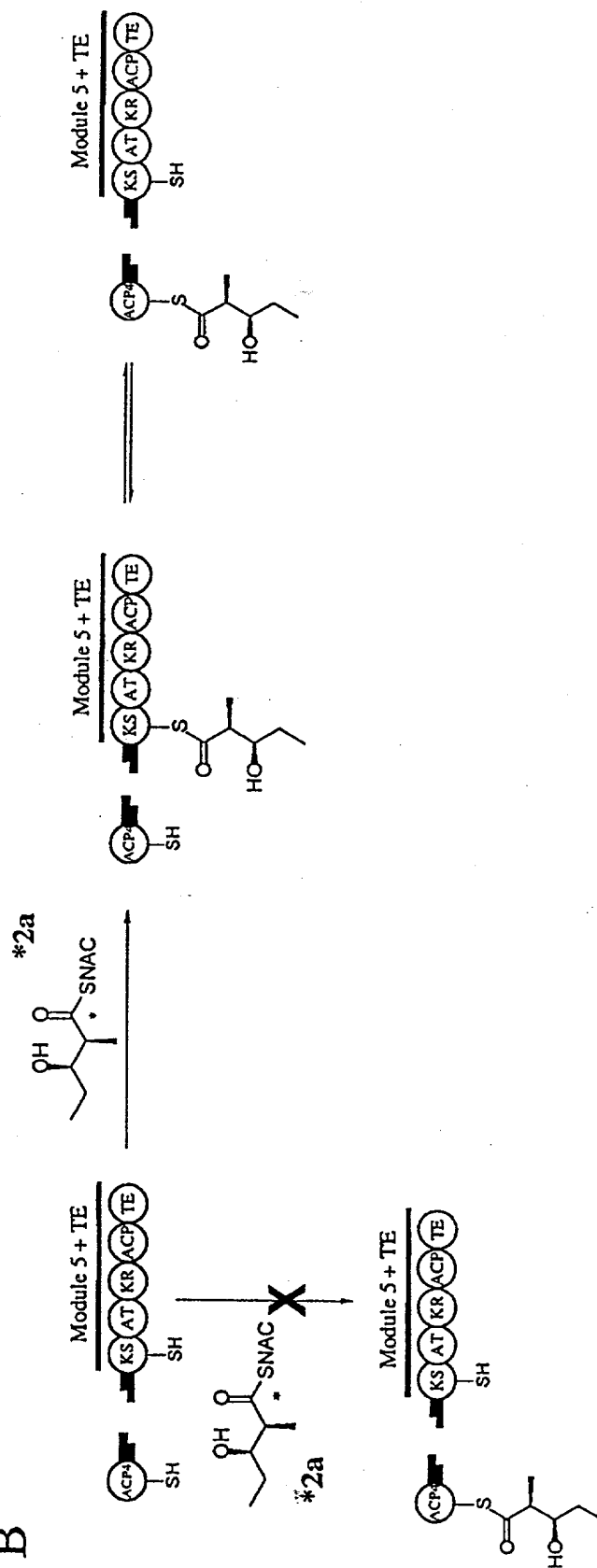
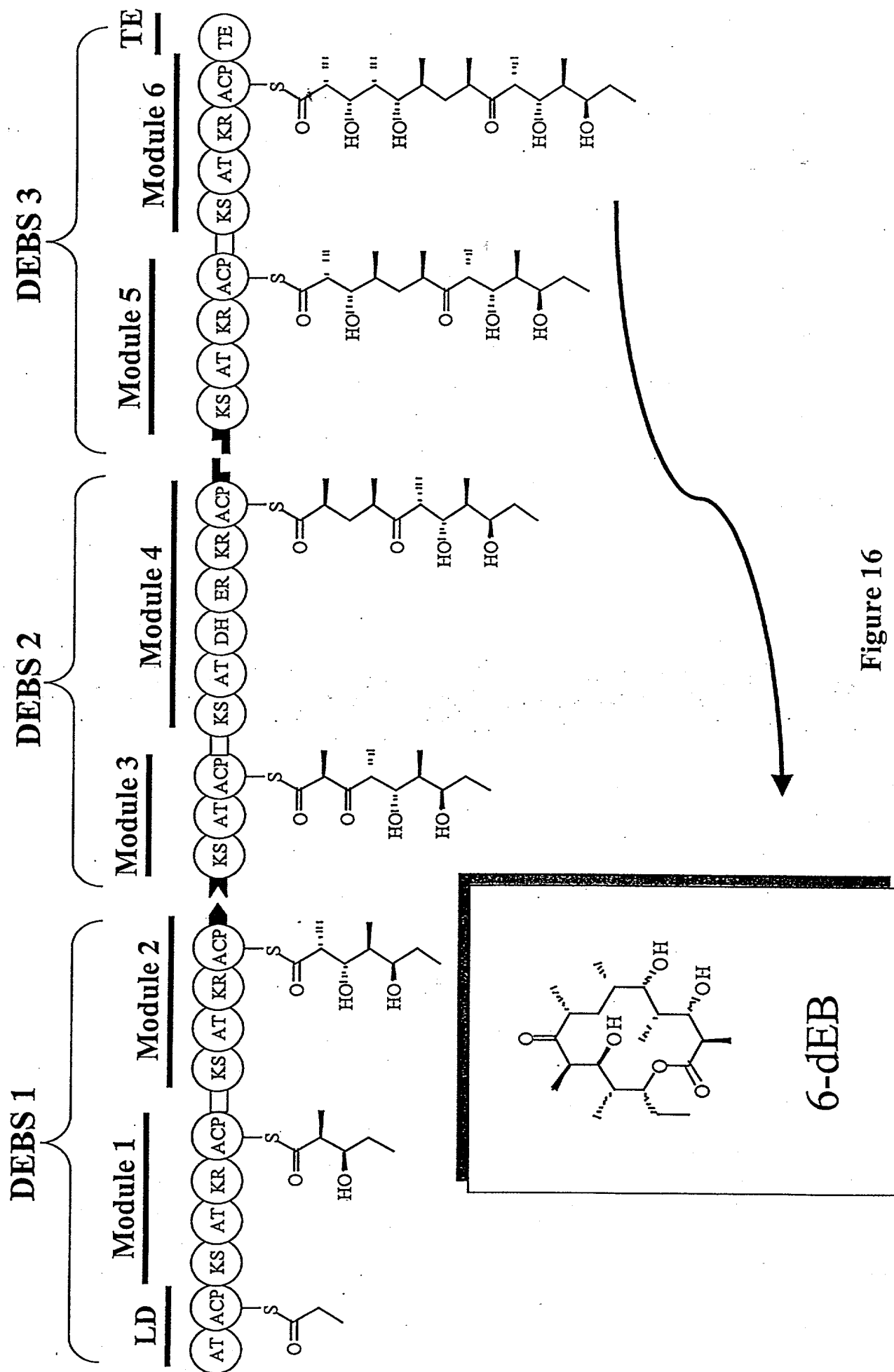


Figure 15



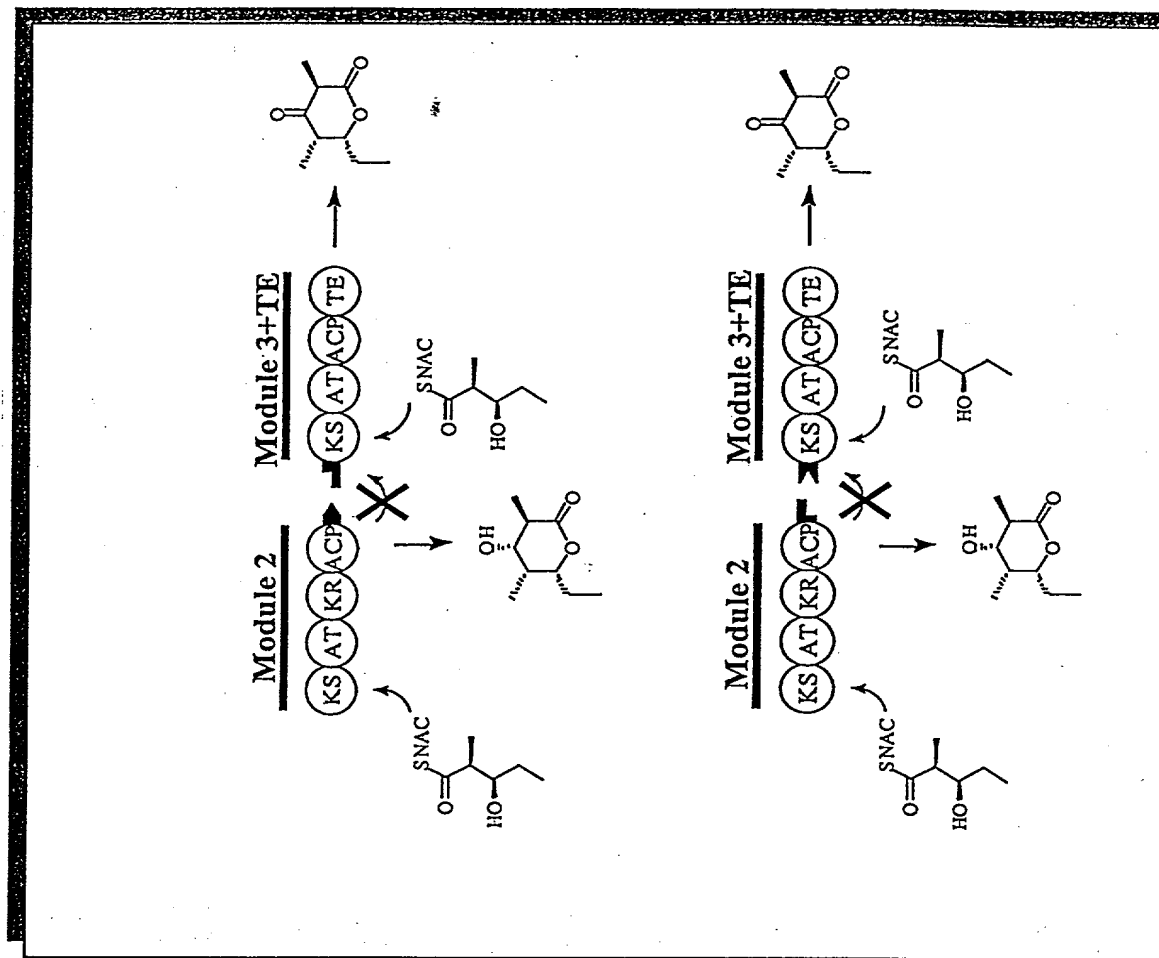
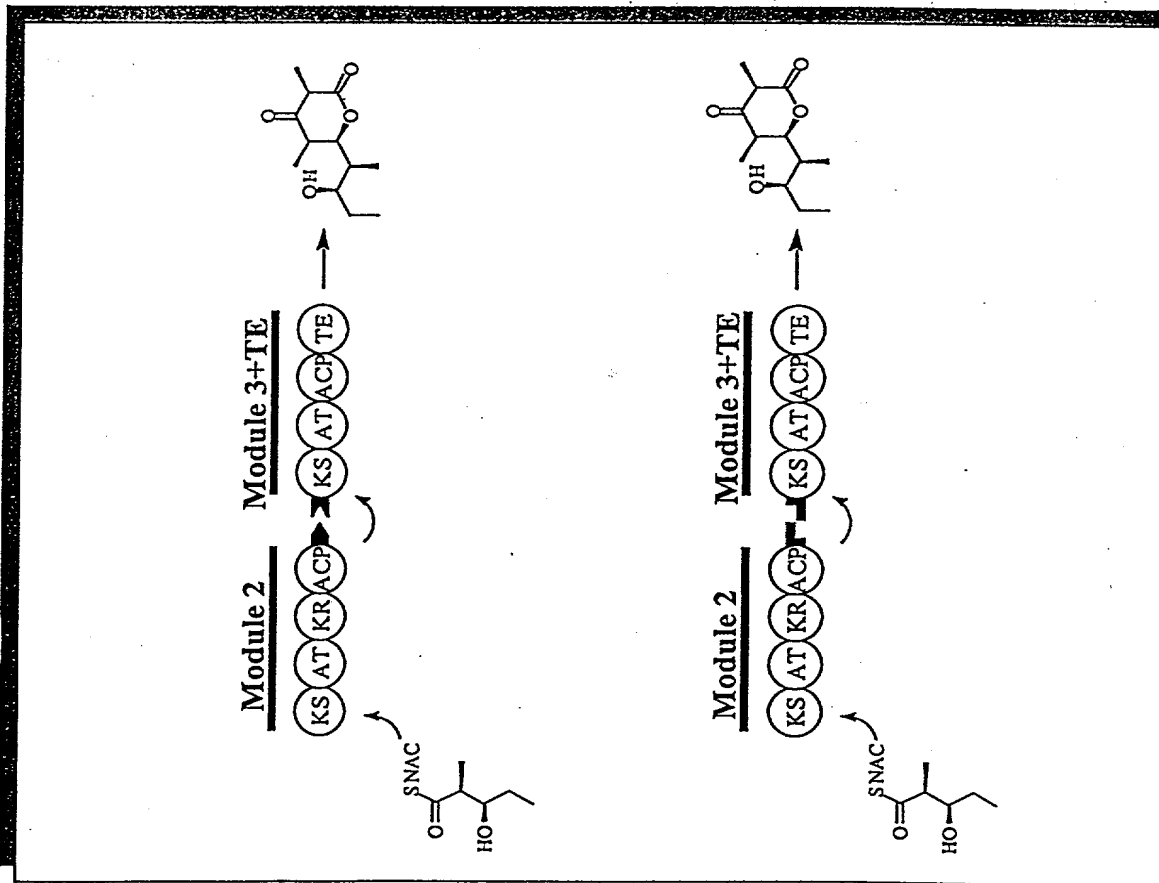


Figure 17

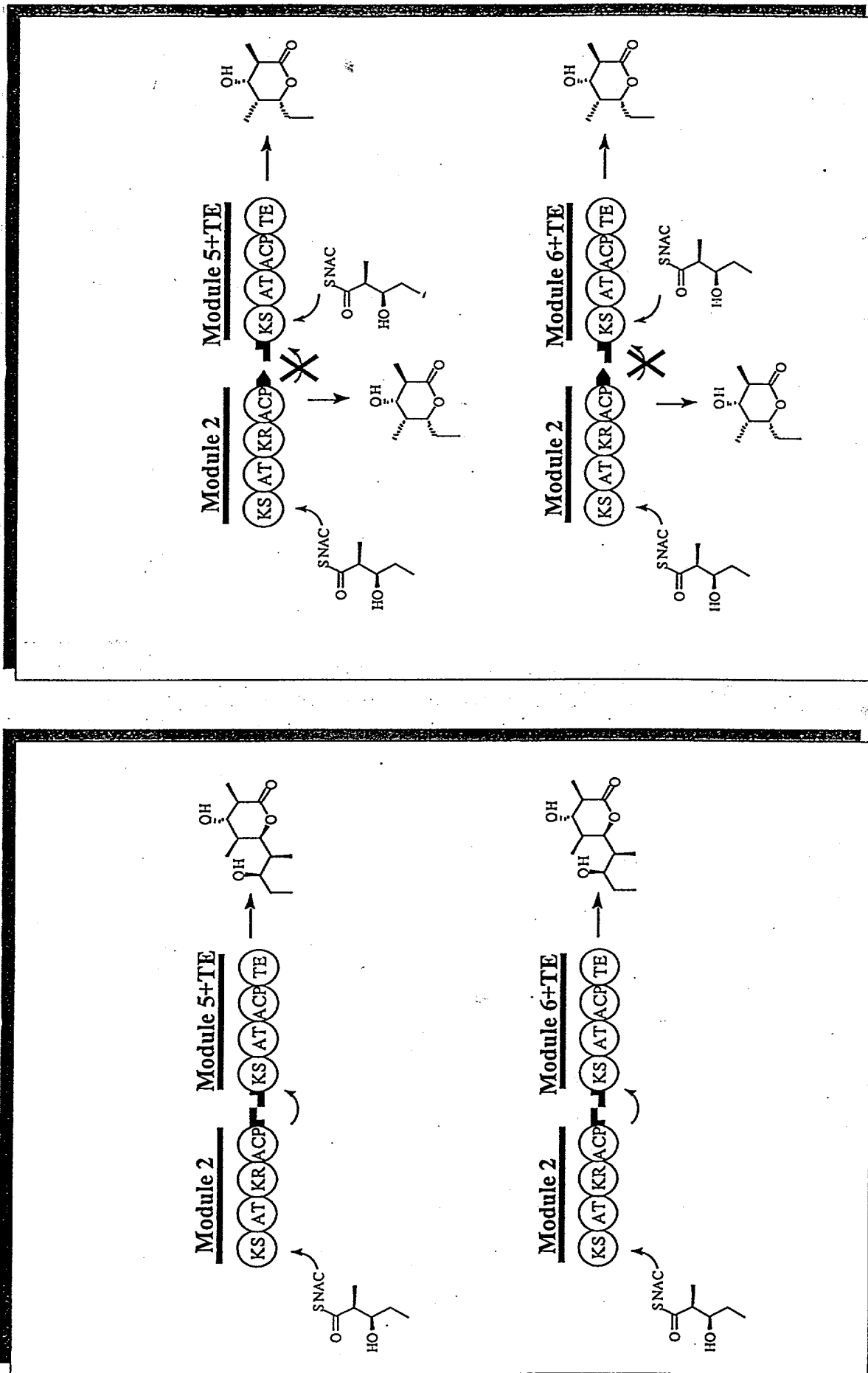


Figure 18

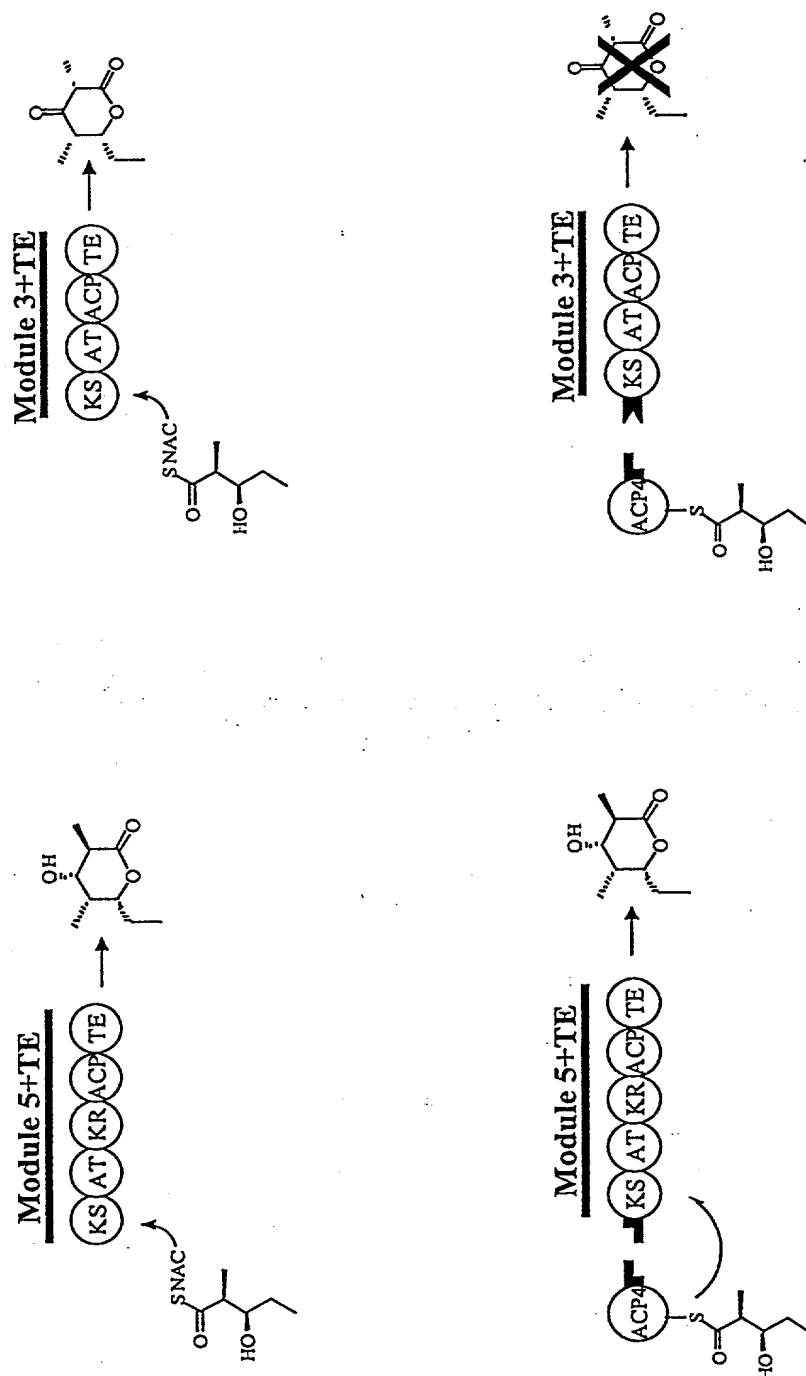


Figure 19

Figure 20

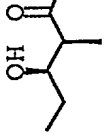
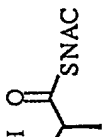
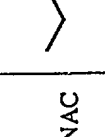
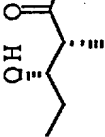
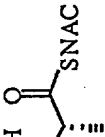
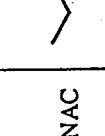
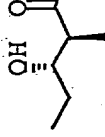
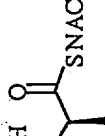
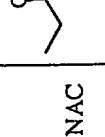
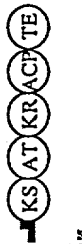
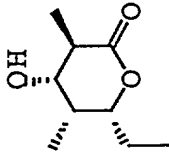
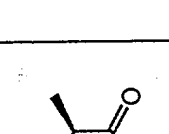
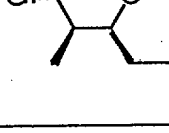
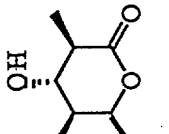
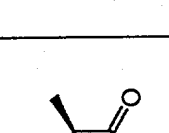



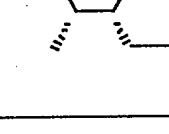

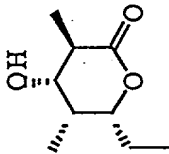
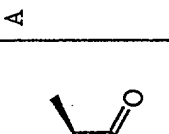
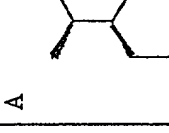
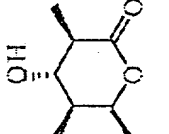
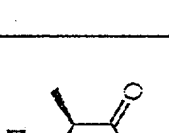

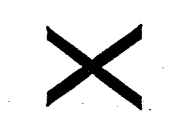


| Substrates Enzyme |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|---|--|--|
| Module 2 + TE  |  |  |  |  |  |  |  |  |  |
| Module 5 + TE  |  |  |  |  |  |  |  |  |  |

Figure 21

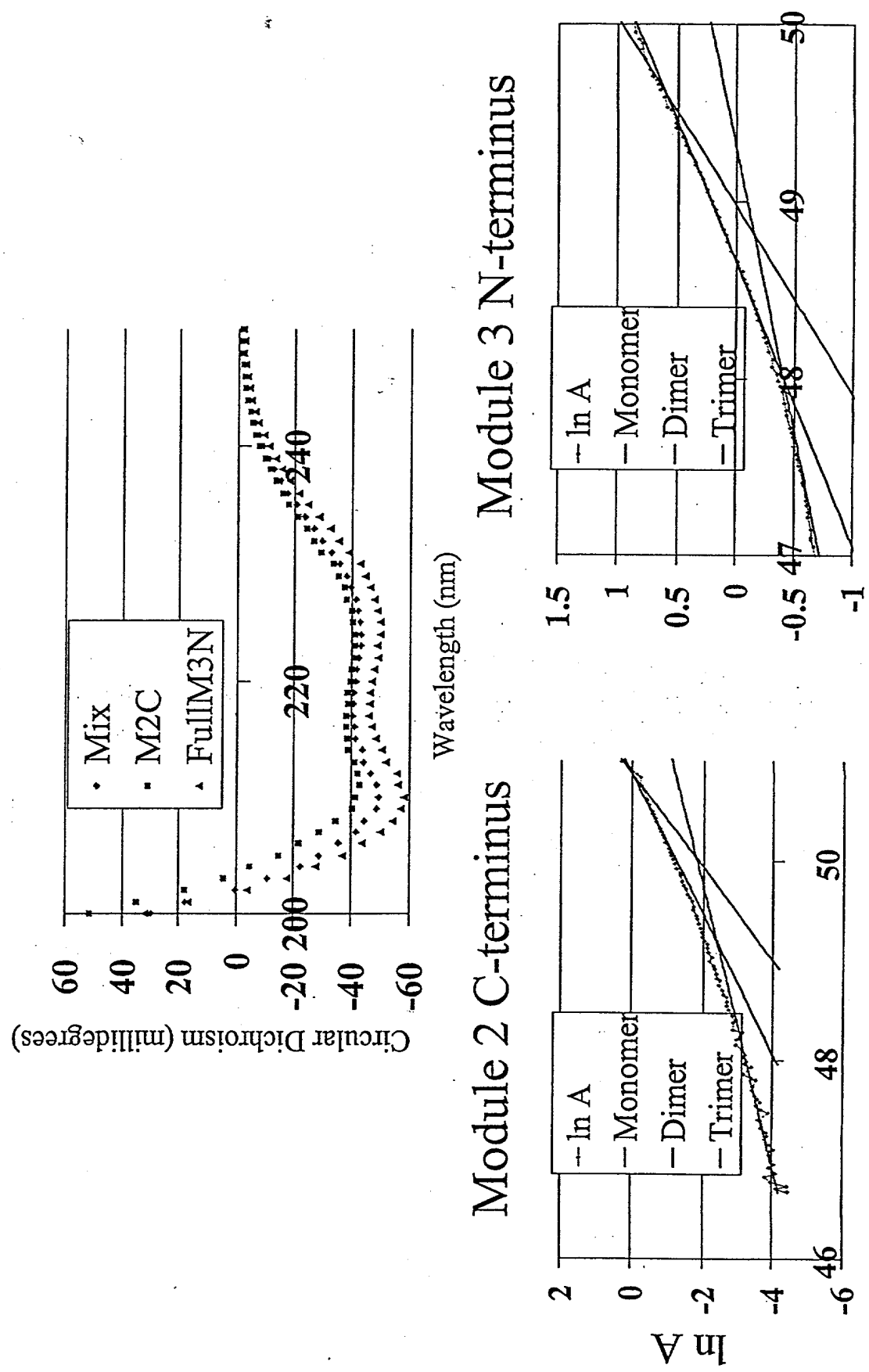


Figure 22

